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Competitiveness in the Gems, Diamonds and Jewellery Business: A Comparative Analysis Between Belgium and Thailand

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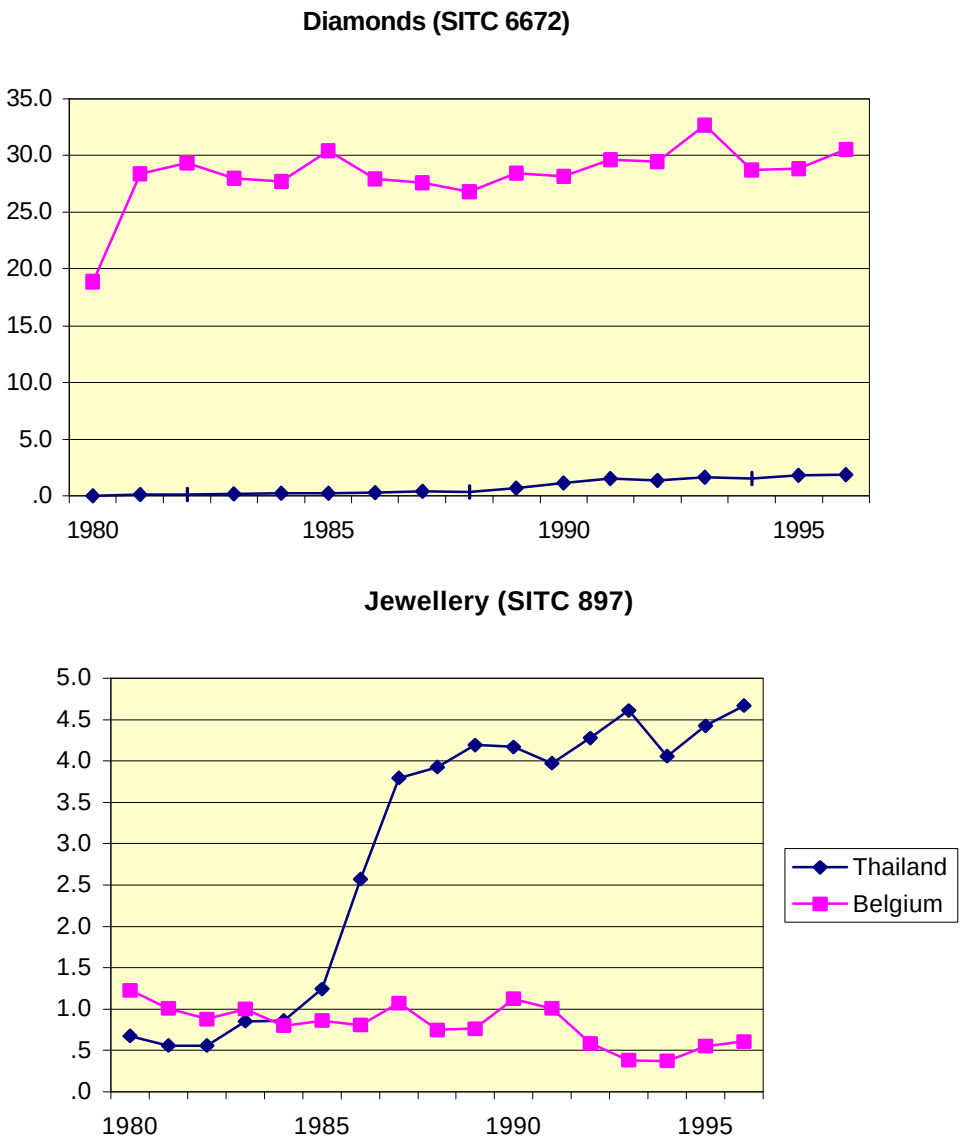
1. Introduction

In both Thailand and Belgium, the diamond and jewellery sectors represent an important part of the country's exports. Antwerp in Belgium is the world centre of diamond trade and manufacturing, where 56 % of world diamond trade takes place, and Thailand is renowned worldwide for its gems and jewellery. The exports of diamonds alone, represented in 1998 5.8 % of Belgium's exports, against 6.6 % in 1996. In Thailand, gems and jewellery represented in 1996 some 3.9 % of total exports and ranked fifth on the top ten export items. In the period January-September 1998 this share increased to 5.7 %. Figure 1 shows the evolution of the world export market shares of Thailand and Belgium in the commodity classes diamonds (SITC 6672) and jewellery (SITC 897) for the period 1980-96. The high export market share of Belgium in diamonds fluctuated, during this period, around 30 %. The world market share of Thailand increased in both diamonds and jewellery with a sharp increase in jewellery from 1985 onwards whereas the world export market share of Belgium in jewellery decreased.

Figure 1: World export market shares in diamonds and jewellery in the period 1980-96



Source: World Trade Analyzer (Statistics Canada)

Taking into account these figures, it seems fully justified to ask what the major competitive factors are of the diamond and jewellery exporters in both countries, which is the topic of the present paper.

The comparison between Belgium and Thailand is not as far-fetched as might appear at first sight and is particularly interesting from another angle.

To maintain their competitiveness, which in Belgium was affected by increasing labour costs, a number of Belgian diamond companies relocated their cheap segment activities to low wage countries and focused their activities in Belgium on the high quality segment . Whereas in 1961 the Belgian diamond business still employed 19010 workers their number had decreased to 3831 by 1992. Thailand was apparently a favourite host country for the new production facilities of Belgian firms. Apart from the wage difference - in 1989 Thai wages were one sixth of Belgian wages - this can be explained by the experience of Thailand in the polishing of precious stones. By 1993, 60 to 70 % of Thai diamond polishing was controlled by Belgian firms (Bernard et al. 1994).

Our attempt to identify the factors of competitiveness and to point to similarities and differences between Thailand and Belgium is based on the results of a survey of diamonds and jewellery companies, conducted in 1997. This is obviously an indirect way of getting such information, as it is exclusively based on the companies' perceptions of their strengths and weaknesses, and of the role played of the marketing mix, but it is extremely difficult to obtain sufficient valid objective data on the performance of individual exporters or on their strategic behaviour.

Two major research questions are tackled:

1. What are the variables that explain best the strength of demand for exports of the Thai and Belgian diamonds and jewellery sector.
2. What differences can be found between the Thai and Belgian survey results on the companies' perception and indication of key competitiveness factors, as well as the role played by public export promotion.

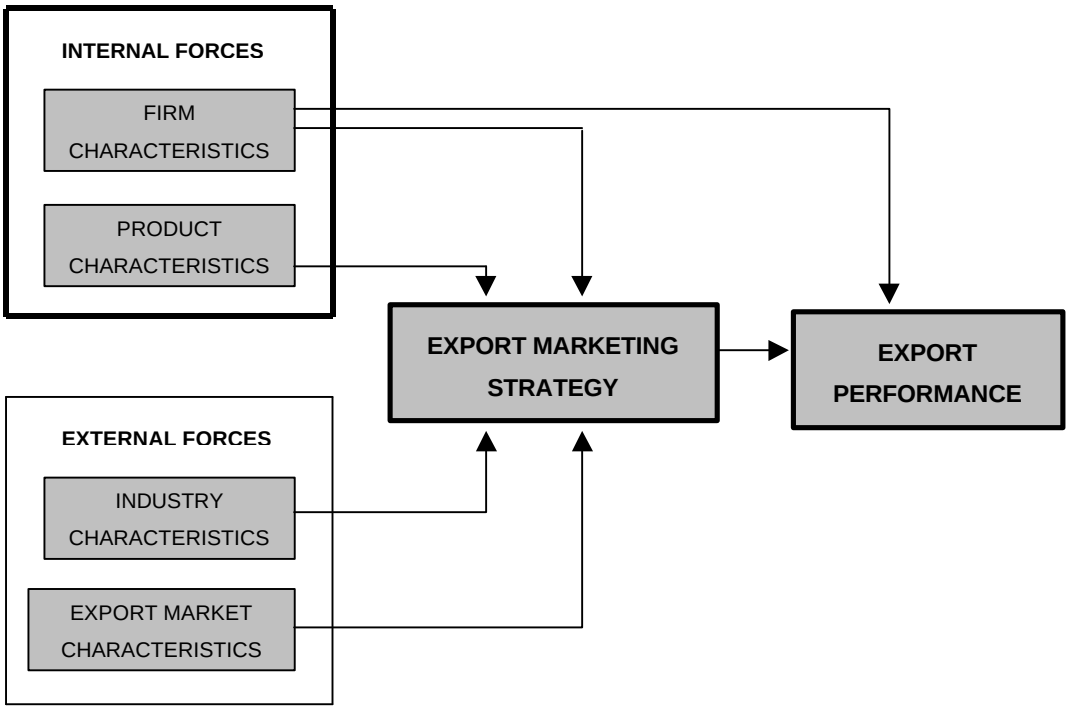
In the following section, we will first sketch the conceptual framework for the analysis of the relationship between marketing strategy and export performance, after which, in section 3 the data collection procedure will be reviewed. Section 4 contains multiple regression results, which are supplemented in section 5 with the results of a discriminant analysis. In the last section, the analysis endeavours to establish whether there are significant differences between exporters in Thailand and Belgium.

2. Background

Cavusgil and Zou (1994) review the theoretical and empirical research that has been carried out with regard to the link between marketing strategy and export performance.
They point out that because of conceptual and methodological differences and problems the results of these studies are fragmented and did not yield an agreed upon conceptual framework of the link between marketing strategy and export performance (see also Madsen 1987, Aaby and Slater 1989).

In this paper, we will use the conceptual framework that is proposed by Cavusgil and Zou (1994), which endorses the perspective of strategy-environment coalignment (Aldrich 1979, Porter 1980, Venkatraman and Prescott 1990). Applied to export activities this theory suggests that the well-considered implementation of marketing strategies - when coaligned with internal (i.e. firm and product) characteristics and external (i.e. industry and market) characteristics - can improve export performance. That is to say, the performance of the export venture is determined by export marketing strategy and firm characteristics (e.g. a firm's capability to implement a chosen strategy). This study, which represents an early attempt to investigate the factors affecting export performance of Thai and Belgian diamond and jewellery firms, will adopt the proposed conceptual framework as shown in figure 2.

Figure 2: Conceptual Framework of the determinants of export performance



Source: Cavusgil and Zou (1994)

In this study we will focus the analysis on internal forces and the characteristics of the marketing mix. However, we will also try to establish the effect on export performance of policy instruments aimed at supporting export activities and instruments used to reduce political and commercial risks related to exporting, which, as far as we know, has not been done before.

2.1 Firm Characteristics

Firm capabilities and constraints profoundly influence the firm's choice of marketing strategy and the ability to execute the chosen strategy (Porter 1980, Aaker 1988).

In export marketing, a firm's international experience is a key asset which constitutes a source of sustainable competitive advantage (Douglas and Craig 1989). International experience enables an ex-

porter to identify the idiosyncrasies in the export markets, to develop an appropriate marketing strategy and to execute it effectively. Thus, exporting experience affects performance.

2.2 Marketing Strategy

As reviewed below, many studies have suggested an influence of marketing strategy on export performance.

Design

Unique product attributes were found to be important to the success of the products (Cavusgil and Nevin 1981, Burton and Schlegelmilch 1987).

Quality

Burton and Schlegelmilch (1987) and Christensen et al. (1987) found that successful exporters had strong quality control. Daniels and Robles (1982) suggested that product quality was a key competency for Peruvian exporters (Joynt 1982). According to interviews with Japanese executives, Johansson and Nonaka (1983) stated that providing the customer with “good value” or a high quality / price ratio was seen as a competitive edge provided by many Japanese products.

Variety

Product variety, through a wider choice for the consumer, is likely to be more adapted to demand. This, in turn, leads to the products’ success.

Grossman and Helpman (1991) define product innovation either as an increase in quality (‘quality ladder’) or as an expansion of variety.

Design, quality and variety, which are all product attributes are, according to information from some manufacturers, important characteristics which professional buyers (i.e. the type of buyers this study primarily relates to) consider in buying gems and jewellery.

Technology

Firms that can make good use of their specialized knowledge can gain a competitive advantage (Reid 1986). Technology is viewed as a way to increase productivity which in turn results in a greater national competitive advantage (Porter 1990). Aaby and Slater (1989) pointed out in their review that technology intensiveness was found to be related to export propensity.

Price

Successful exporters offer alternative price “packages” using tag prices, discounts, and credit in order to give the foreign customer an attractive total deal (Kirpalani and Mac Intosh 1980) Additionally,

Cristensen et al. (1987) stated that successful exporters relied on international competitive prices as a benchmark and did not ask for premiums for exchange and extraordinary risks.
Cavusgil and Zou (1994) found a moderately positive link between price competitiveness and export performance.

Distribution

In a review of the empirical literature on export performance during 1978-1988 , Aaby and Slater (1989) concluded that fifteen studies related management perceptions on the importance of distribution to the propensity to export. Moreover, the authors cited several other studies that found the relationship between distribution strategy and export performance to be positive.
Cavusgil and Zou (1994) found a moderately positive link between the support to foreign distribution channels and export performance.

Promotion

Firms that believed that promotion in export markets was an important activity achieved higher levels of export sales (Kirpalani and Mac Intosh 1980).

3. Data collection and statistical methodology

In Thailand a mail survey in Thai[1] was sent to 260 gems and jewellery companies (from the 1995-1996 Thailand Exporters List). The survey contained questions relating to export behaviour, competitiveness, export promotion, commercial and political risk insurance. Following a three-step procedure with telephonic follow-up, a low response rate of 27 % (71 firms) was obtained.

In Belgium the survey was sent to all Flemish firms that were active in the gems, diamonds and jewellery business[2]. The list of these firms was primarily taken from the 1996 catalogue of the Jedifa trade fair in Antwerp (14th annual Jewellery, Diamond and Watch Fair). In total 238 companies were contacted. In spite of a telephonic follow-up, only 55 completed surveys (23 %) were returned[3].

Cavusgil and Zou (1994) distinguish four aspects of export performance:

- achievement of initial strategic management goals
- average annual growth rate of export sales
- profitibability of exporting
- management's perceived export success

The measures that were used in the survey to indicate export performance relate to the last two aspects.

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[1] A common survey was drafted in English which was then translated into Thai and Dutch by the Flemish and Thai researcher which had jointly drafted the English version.
[2] The questionnaire is given in appendix A.

In our survey export performance is first indicated by the demand for the company's exports which was measured by asking the respondents to indicate the perceived strength of the demand for exports ranging from 1 (extremely weak) to 5 (extremely strong) .
The second measure indicates the profitability of company's exports compared to the year before (a 6-scaled range from more profitable to more loss).

The subjective approach of measurement was used because it proved almost impossible to get, in the sectors involved, sufficient valid objective data on export demand (e.g. sales, profits).

Export experience (firm characteristic) was measured by the number of years the company had been exporting.

All aspects of the marketing strategy (marketing mix) were measured by asking the respondents to assess their competitiveness in product design, quality, variety, technology, price, distribution, promotion, delivery time and service, by indicating a score between 1 and 5 (from little competitive to more competitive).

The questions in the questionnaire can be grouped into five parts:

1. General information: This part contains information on the company and on the length of time the company is in business.
2. Competitiveness: Firms were asked to rate their competitiveness for a number of given aspects on a scale from 1 meaning very little to 5 meaning very much.
3. Export promotion: Firms were asked whether a given instrument was a main instrument for export promotion or not and to indicate its degree of importance on a 1-5 scale.
4. Reducing commercial risk: Firms were asked whether they used a given instrument to reduce the commercial risk or not and to indicate the degree of importance on a 1-5 scale.
5. Reducing political risk: Firms were asked whether they used a given instrument to reduce the political risk or not and to indicate the degree of importance on a 1-5 scale.

4. Regression results

In a first step we used multiple linear regression (OLS) to analyse the influence of factors determining the demand for exports. We regressed the firms' demand for exports on variables related to firm characteristics (i.e. exporting experience) and aspects of the marketing strategy (i.e. design, quality, variety, technology, price, distribution, promotion, delivery time, service, flexibility and financial status) on the Thai and the Belgian sample seperately.

To examine whether there are indications of multicollinearity, the variance inflation factor (VIF) was used. VIF is defined as the reciprocal of $1-R^2$ for a variable with respect to all other regressor variables in the model. A high value of VIF indicates multicollinearity of the explanatory variables. Wetherill,

[3] Both for Thailand and Belgium, we have unfortunately not been able to perform a non-response analysis which seemed, given the low response rates, appropriate.

Duncobe and Kenward (1986) suggest that the largest VIF should not exceed ten. This cut-off point is far above the highest VIF value (i.e. 2.51 for the Thai sample and 2.09 for the Belgian sample) found in the regression analyses. Thus, according to the VIF criterium, multicollinearity is not a problem.
In table 1 the regression results for both samples are shown.

With regard to the Thai sample the R^2 shows that .342 of variance is explained. The F-test which tests for the overall significance of the regression equation is rejected at $\alpha = .05$ which implies that the combined regression coefficients are significant. As to the individual coefficients the results from the t-test indicate that the coefficients of design, price and promotion are significant at the 5% level.
Competitiveness in design, price and promotion are in decreasing order significant determinants of the demand for exports of Thai firms. Thai export companies are not strong in the competitive dimensions which are found to be important determinants of export demand. The competitiveness in design, price and promotion is respectively rank ordered 7th, 5th and 9th.

This may explain why only 14% of Thai exporters said that their last year exports were more profitable, 44% reported less profitable exports, 28% were about as profitable and the others exported with loss. According to our results Thai exporters could enhance their export performance by improving their competitiveness in terms of design, price and promotion.

It is noteworthy that only 60% of Thai exporters had budgets allocated to export promotion and the average amount was only about 2.6 million baht a year. Wider use and more investment in export promotion seems to be needed[4]. Investment in high-skilled labour for designing attractive gems and jewellery might also prove succesful[5]. The results also indicate that consumers tend to demand both a nice design and competitive prices. This means that the value-added from better designed gems and jewellery should be obtained at a minimal cost.

As shown in table 1 regression for the Belgium sample results in a low R^2 and not a single coefficient is found to be significant, not even at the 10% level. If these results are not all too biased by the insufficient Belgian data they suggest that none of the variables that were considered has any significant effect on the export performance of Belgian firms which seems unlikely.

We also performed OLS with the profitability variable (exports from more profitable to more loss than the previous year) as dependent variable. However, this did not yield any significant coefficient, for the Thai nor for the Belgian sample, and therefore the results are not given.

We have performed OLS on qualitative (ordinal) dependent variables. Because of the discrete nature of these variables OLS is however not appropriate. Residuals, for instance, can a priori not be assumed to be normally distributed. Although these assumptions are in practice often ignored we also performed multinomial logistic regression, which is more appropriate to model ordinal dependent variables. Unfortunately, this led to inconclusive results.

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[4] Cavusgil and Zou (1994) found a negative relationship between promotion adaptation and export performance and although they point out that previous findings supported a positive relationship, they gave some arguments for a more complex relationship between the two variables.

Table1: Regression results: factors affecting Thai and Belgian export performance

	Thai Sample		Belgian Sample	
Variables	β	Sig. t	β	Sig. T
Delivery	.095		-.095	
	(.756)	.453	(-.405)	.690
Design	.313		-.071	
	(2.429)	.019*	(-.407)	.688
Distribution	-.109		-.150	
	(-.875)	.386	(-.739)	.468
Price	.300		.223	
	(2.492)	.016*	(.692)	.497
Promotion	.257		.056	
	(2.038)	.047*	(.260)	.797
Quality	-.079		-.217	
	(-.590)	.558	(-.595)	.558
Service	-.193		-.024	
	(-1.301)	.199	(-0.83)	.934
Technology	.046		.069	
	(.372)	.712	(.353)	.728
Variety	-.018		.031	
	(-.175)	.862	(.177)	.861
Year of Export	.013		-.006	
	(.991)	.327	(-.625)	.539
(Constant)	1.524		4.315	
	(2.129)	.038*	(1.555)	.135
R^2	.342		.101	
F (df)	2.65*		.236	
	(10, 51)		(10, 31)	

* p< .05

For the Thai sample the likelihood ratio tests were found to be significant (5%) for quality, service and price competitiveness[6]. However, none of the Wald statistics, which test for the significance of an effect within a logit and not for overall significance like the likehood ratio tests, is found to be significant. Although the likehood test is regarded as a better test than the Wald statistic, the insiginifance of the latter does not allow us to draw any meaningful conclusions from the multinomial regression.

For the Belgian sample, not all too surprisingly, none of the likehood ratio tests nor the Wald tests were significant[7].

5. Discriminant analysis

In a second step of the analysis we try to establish possible differences between competitive and non-competitive firms on the basis of discriminant analysis[8]. First we use strength of demand as grouping variable and in a second stage the 11 perceived competitiveness ratings are used as grouping variables.

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[5] Some Thai firms actually hire foreign designers to meet market demands.

[6] The likelihood ratio tests compare for each effect the likelihood value of the final model to the value of the reduced model (given effect removed). Significance implies that not all coefficients of the given effect do not significantly differ from 0.

[7] Multinomial logistic regression on the profitability variable did not yield any significant results for the Thai nor for the Belgian sample.

[8] In discriminant analysis like in regression and factor analysis, interval scaled variables are required. In statistical practice this requirement is loosened in such a way that also ordinal data, if scaled at a sufficient level of detail, are allowed, assuming the "principle of equal distance" to be valid.

5.1 Disriminant analysis with export demand as grouping variable

We performed a discriminant analysis based on the strength of export demand. If perceived competitiveness was above average the firm was classified in the group of competitive firms. If not, the firms was classified in the non-competitve group.

First we looked at the extent to which the 11 variables of perceived competitiveness discriminate between competitive and non-competitive firms. The results for Thailand are shown in table 2. For Belgium no significant results were obtained.

Table 2: Discriminant analysis for Thailand- 11 competiveness variables

	Function Coefficients	Functions at group centroids	Test results
DESIGN	,780	Group 1: -,676	Eigenvalue: ,378
TECHNOLOGY	-,094	Group 2: ,541	Wilks' Lambda: ,726 (,01)
QUALITY	-,056		Box's M : 62,928 (,002)
DELIVERY	,314	Group 1: Demand for exports 1-3	% of original grouped cases
PROMOTION	,353	(non-competitve)	correctly classified : 73,0
FLEXIBILITY	,097	Group 2: Demand for exports 4-5	
FINANCIAL STATUS	,268	(competitve)	

For Thailand a number of variables discriminate well between competitive and non-competitive exporters with competitveness in design and promotion as best positive discriminators. These results support the findings of our regression analysis and of forementioned studies on the importance of design and promotion. Price competitiveness is not found to discriminate well. Surprisingly, competitiveness in technology and quality is found to discriminate between competitive and non-competitive firms, however with a negative sign (i.e. the more competitive a Thai firm is in technology and quality the more likely it is to belong to the non-competitive group).

We also performed a discriminant analysis with the variables relating to government export promotion and the instruments used to reduce the commercial and political risks connected to export activities (see questionnaire). For the discriminant analysis only those variables were used that differed significantly between the group of competitive and non-competitive firms according to Mann-Whitney U-tests (see section 6 for a description). The results of the final discriminant analysis are summarised in table 3.

Apparently, if firms find participation in domestic trade fairs and exhibitions important (XHIBID.R) they more likely belong to the group of competitive exporters. On the other hand, if the use of government information (INFO) and revocable letters of credit-not confirmed (NCO.RLC) is rated as important the firm will more likely belong to the non-competitive group. We do not really have an explanation for this surprising result.

Table 3: Discriminant analysis for Thailand- government support and reduction of export risks

	Function Coefficients	Functions at group centroids	Test results
INFO	,729	Group 1 : ,527	Eigenvalue : ,260
XHIBID.R	-,221	Group 2 : -,477	Wilks' Lambda : ,794 (,004)
NCO.RLC	,532		Box's M : 29,186 (,000)
			% of original grouped cases correctly classified : 67,2

5.2 Discrimininant analysis with perceived competitiveness as grouping variable

In the survey firms were asked to rate their perceived competitiveness on 11 aspects.
In this section we will report on the results of individual discriminant analyses performed with these competitiveness variables (rating from 1 to 5) as grouping variables. For each variable two groups were distinguished, following a mean split. With the discriminant analyses we tried to establish which of the variables on the instruments for export promotion, on the use of government services and on the reduction of commercial and political risks (see questionnaire) discriminate well between the group of competitive and non-competitive firms.

In appendix b we report on the results of discriminant functions with a significant Wilks' Lambda (5 % level). We also give Box's M which should also preferably be significant at the 5 % level. This seems however only to be the case for a limited number of discriminant functions. This can be explained by the large number of missing values. Some discriminant functions can only be computed for a small number of respondents which results in non-significance of Box's M. If there are less than 2 nonsingular covariance matrices Box's M can not be performed.

In the next sub-sections we will describe the discriminant results of the Belgian and Thai sample.

5.2.1 Belgian sample

For the Belgian sample there is no discriminant function for which both Wilks' Lambda and Box's M are significant which is probably due to a lack of sufficient data. This supports the regression results. Participation in trade fairs and exhibitions abroad and in Belgium appear in a number of discriminant functions, however not in a very probable nor consistent way.

Firms which rate participation in trade fairs and exhibitions abroad as important are more likely to belong to the non-competitive group with regard to quality and delivery time. Firms which rate participation in trade fairs and exhibitions in Belgium as important are more likely to belong to the competitive group for flexibility but to the non-competitive group for distribution and financial status. Firms which find the export training programmes supported by Export Flanders important are more likely to belong to the competitive group for service but to the non-competitve group for quality.

Consistently but ironically, firms which highly rate contacts with Belgian embassies and foreign trade attachés in foreign countries for information on potential customers most likely belong to the non-competitve group for price, delivery time and financial status.

Both the non-significant Box's M and the inconsistent and improbable results urge for caution in drawing any conclusion from the estimates on the Belgian sample.

5.2.2 Thai Sample

For the Thai sample there are 3 discriminant functions for which both Wilks' Lambda and Box's M are significant at the 5% level (product design, promotion and financial status). Moreover the results are more consistent and probable.

For instance, firms which rate government information as important most likely belong to the competitive group for quality, delivery time, promotion, distribution, flexibility and financial status.
This contradicts, in an indirect way, the negative effect of government information on export demand found in 5.1. As the effect of government information on competitiveness in delivery time, promotion, flexibility and financial status is positive and the effect of these competitiveness variables on export demand is also found to be positive this shows a positive effect of government information on export demand, contrary to the negative effect found in table 3.
Firms which rate participation in trade missions abroad as important more likely than others belong to the competitive group for product variety, price, promotion and distribution. Firms which participate to outgoing trade missions more likely than others belong to the competitive group for product design, product variety and promotion. Firms which attach great importance to participation in trade fairs and exhibitions abroad most likely belong to the competitive group with regard to product design, product variety, promotion and distribution but to the non-competitive group for price competitiveness. Firms which reduce their exposure to commercial risk through non confirmed irrevocable letters of credit most likely belong to the competitive group with regard to competitiveness for product design and promotion and those using non confirmed but revocable letters of credit to belong to the competitive group with regard to flexibility.

In conclusion we can say that the results for the Thai sample are more reliable and consistent than those of the Belgian sample. Participation to trade missions, fairs and exhibitions abroad and government information seem to discriminate well between Thai exporters which rate themselves as competitive and those which rate their own competitiveness lower.

6. Differences between Thai and Belgian firms

In this section we analyse whether there are factors in which Thai firms differ significantly from their Belgian counterparts.
As most variables in the survey are ordinal (e.g. firms were asked to indicate the degree of importance of a given statement on a scale of 1 to 5) the Student t test can not be used to analyse if and to which extent two independent samples can be regarded as belonging to the same population. For this pur-

pose the Mann-Whitney U test can be performed. This non-parametric test merges the two samples and ranks the observed values. The null hypothesis is that the two samples come from identical populations which implies that the rankings can not differ significantly. The test statistic is U. If it exceeds the critical value for U at a given significance level the null hypothesis can be rejected in favour of the hypothesis that the two samples do not come from identical populations.

For a great number of variables the Mann-Whitney test finds the differences between Belgian and Thai companies to be significant. However, the significance of the differences might be in part due to cultural bias, Thai respondents avoiding too negative statements.

Douglas and Craig (1983) and Bensaou, Coyne and Venkatraman (1999) rightly stressed the importance of establishing metric equivalence in cross-national research. To quote Douglas and Craig (1983) from Bensaou, Coyne and Venkatraman (1999, p, 672):

> *Here, comparability in content and quality is necessary in order to ensure that findings reflect similarities and differences between countries, rather than the spurious effect of sociocultural differences in response to a research instrument, administration procedures, or lack of adapatation of the research design and plan to a specific sociocultural environment.*

It should be pointed out that the metric equivalence in our study is problematic. Following Bensaou, Coyne and Venkatraman (1999), who propose a framework for assessing metric equivalence in cross-national strategy research, we are convinced that sampling equivalence is plausible but that construct and measure equivalence is somewhat doubtful given the large cultural differences between both countries and the insufficient prospects of resolving this problem.

In table 4 we report on the variables for which the null hypothesis can be rejected at the 5 % level (two-tailed). The actual significance levels of the Mann-Whitney test are mentioned between brackets.

As a general conclusion one can say that these results show that firms from Thailand indicate a significantly higher perceived competitiveness and a significantly higher reliance on, and a higher perceived degree of importance of instruments of export promotion and instruments to reduce commercial and political risks As mentioned before it is not very clear to which extent these differences reflect actual differences in the underlying aspects or to which extent they reflect poor metric equivalence due to e.g. an important cultural bias. However, with regard to the higher perceived competitiveness in Thailand, the evolution of actual world export market shares, given in figure 1, shows that Thai firms have indeed increased their competitiveness relative to Belgium, with the Thai world market share increasing both for diamonds and jewellery whereas for Belgium the high share in diamonds stabilised but the share in jewellery decreased significantly in the period 1980-96.

Table 4: Mann-Whitney tests on the significance of differences between Belgian and Thai firms

Variable	Mann-Whitney U (significance)
General information	
Length of time in business	Belgium > Thailand .(.021)
Length of time in exporting	Belgium > Thailand (.000)
Competitveness	
Product variety competitiveness	Thailand > Belgium (.022)
Promotion competitiveness	Thailand > Belgium (.000)
Export Promotion	
Budget for promotion ?	Thailand > Belgium (.000)
Participation to trade missions abroad ?	Thailand > Belgium (.030)
Participation to domestic trade fairs ?	Thailand > Belgium (.000)
Degree of importance of domestic trade fairs	Thailand > Belgium (.000)
Participation to foreign trade fairs ?	Thailand > Belgium (.000)
Sending export sales staff abroad ?	Thailand > Belgium (.000)
Export training programmes ?	Thailand > Belgium (.000)
Contacts with foreign incoming trade missions ?	Thailand > Belgium (.020)
Participation in exhibitions abroad ?	Thailand > Belgium (.000)
Degree of importance of participation in exhibitions abroad	Thailand > Belgium (.040)
Use of government information ?	Thailand > Belgium (.000)
Reducing commercial risks	
Use of irrevocable letters of credit- confirmed ?	Thailand > Belgium (.004)
Use of revocable letters of credit- confirmed ?	Thailand > Belgium (.009)
Reducing political risks	
No export to politically risky countries ?	Thailand > Belgium (.007)
Political risk insurance ?	Thailand > Belgium (.012)

7. Conclusions

The mail surveys that are the basis of the foregoing analysis have, despite a three-step procedure, low response rates which, without any non-response analysis, urges caution in interpreting the results. Another problem is the cross-national approach with its inherent difficulties of establishing metric equivalence.

The results of a multiple regression on the Thai sample show that competitiveness in design, price and promotion significantly explains part of a firm's export performance, which supports previous findings. The relative poor perceived performance of Thai firms on these variables suggests that the Thai export performance in diamond and jewellery can be improved by stressing these factors.

For the Belgian sample none of the used variables had a significant coefficient which if not explained by insufficient Belgian data suggests that these variables have no effect on export performance.

Multinomial logistic regression which is, given the discrete nature of the dependent variable, a more appropriate estimation procedure did not yield any significant results.

The second step of the analysis consisted in a discriminant analysis.

It was found for Thailand that competitiveness in design, quality, technology, delivery time, promotion, flexibility and financial status discriminate well between firms with high export demand and firms with low export demand. The sign of quality and technology was surprisingly negative.
When looking at data on the perceived importance instruments of government export promotion and reduction of export risks we found for Thailand that firms that found participation in domestic trade fairs and exhibitions important were more likely competitive than non-competitive. The importance of government information and the use of revocable letters of credit was also found to discriminate well between competitive and non-competitive exporters, however with a counterintuitive negative sign.
For Belgium, no significant results could be found.

We then performed a discriminant analysis with the 11 competitiveness variables as grouping variables.
The results were rather unreliable for the Belgian sample but showed some probable and consistent indications on the importance of trade missions, fairs and exhibitions abroad and government information for the competitiveness of Thai firms. A possible explanation for the difference between the Belgian and Thai sample can, apart from the insufficient Belgian data, be that support mechanisms and trade missions abroad are indeed more important for the competitiveness of Thai firms than for Belgian firms which on average have more experience in export.

For the last step of the analysis we tried to establish significant differences between the Thai and the Belgian sample.
The significant differences that were found between Belgian and Thai firms which suggest that Thai firms indicate higher perceived competitiveness and a higher reliance on instruments of export promotion and instruments to reduce commercial and political risks may therefore partly be explained by a cultural bias.

The foregoing analyses were highly hindered by the low response rates and the low number of observations that followed from this. The most approriate estimation procedures to deal with ordinal variables were unsatisfactory and did not yield any meaningful results.

From a more conceptual perspective some limitations spring to mind.
Obviously, the relationship between marketing strategy and export performance is far more complex and is influenced by a larger number of factors (e.g. firm, industry and export market characteristics) than have been covered in our survey and analysis. Moreover,.as Cavusgil and Zou (1994) rightly argue that it is not so much the characteristics of the marketing strategy as such but the adaptation of these characteristics to the environment (i.e. real strategy-environment coalignment) that matters, this relationship should preferably be looked at from a dynamic perspective, through the use of longitudinal data. These limitations might explain the unsatisfactory results of some of our estimation procedures.

With regard to the cross-national comparison we endorse the view expressed by Douglas and Craig (1983) and Bensaou, Coyne and Venkatraman (1999) that it is important to assess metric equivalence and acknowledge that this, despite our attempt to take account of the problem, may be problematic in

our study. On the other hand, it is not very obvious how the lack of equivalence can be satisfactorily resolved even when the framework proposed by Bensaou, Coyne and Venkatraman (1999) is followed, as it is not always clear whether the procedures followed to establish metric equivalence do not wipe out proper differences between two national samples (populations).

APPENDIX A: Questionnaire (variable names in bold italic)

Survey on Export Behaviour and Export Promotion in the sector "Gems, diamonds and jewellery"

Export Behaviour

1. Type of your company …….. Manufacturer…….. Trader……. Other…….. (***Type***)
2. Length of time in business ……..years (***Year***)
3. Length of time for exporting …….. years (***Y.Export***)
4. Excess capacity ……..% (omit this question for trader) (***Capacity***)
5. Please rate the competitiveness of your company from 1 meaning very little to 5 meaning very much for the following aspects.
   ……. Product design (***Design***)
   ……. Technology (***Techno***)
   ……. Quality (***Quality***)
   ……. Product variety (***Variety***)
   ……. Service (***Service***)
   ……. Price (***Price***)
   ……. Delivery time (***Delivery***)
   ……. Promotion (Promotio)
   ……. Distribution (***Distribu***)
   ……. Flexibility (***Flexible***)
   ……. Financial status (***Finance***)
6. How strong was demand for your exports last year?(1 for extremely weak , 5 for extremely strong) (***Export***)
   …….
7. Is there a R&D budget ? (***RD***)
   ……. Yes ……. No
   If yes, what percentage of sales is the R&D budget ? ……. %
8. Last year sales ……. BEF (***Sale***)
9. Last year export ……. BEF (***Export***)
10. Compared to the year before , were your company's exports. (***Perform***)
    ……. Less profitable ……. Less loss
    ……. about the same profitable ……. about the same loss
    ……. more profitable ……. more loss

Export Promotion

11. Is there a budget for export promotion in your company ? (***Bud.Prom***)

……. Yes ……. No

If yes, how much per year ……. BEF (***Y.Budget***)

12. What are your main instruments for export promotion?

(please indicate the degree of importance on a scale of 1 to 5 , 1 meaning very little important to 5 meaning very important)

	Yes	No	Degree of importance
• participation in trade missions abroad	…….	…….	***Trademis.r***
• participation in trade fairs and exhibitions abroad	…….	…….	***Exhibit.f***
• participation in trade fairs and exhibitions in Belgium	…….	…….	***Xhibid.r***
• sending export sales staff abroad	…….	…….	***Train.r***
• contacts with Belgian Embassies and foreign trade attaches in foreign countries for information on potential customers.	…….	…….	***Co.gov.r***
• Agents with promotional budget	…….	…….	***Agency.r***
• other (please specify)	…….	…….	***Other1.r***

13. Is your company using the services of Export Flanders (VDBH) or the Belgian Office for Foreign Trade (BDBH)?

(please indicate the degree of importance on a scale of 1 to 5 , 1 meaning very little important to 5 meaning very important)

	Yes	No	Don't know	Degree of importance
• Participation in outgoing trade missions	…….	…….	…….	***Cotrad.r***
• Contacts with foreign incoming trade missions in Belgium	…….	…….	…….	***Contac.r***
• Participation in trade fairs and exhibitions abroad with support of Export Flanders	…….	…….	…….	***Showfs.r***
• use of information	…….	…….	…….	***Info.r***
• export training programmes supported by Export Flanders	…….	…….	…….	***Strain.r***
• other (please specify)	…….	…….	…….	***Other2.r***

14. Is your company reducing its exposure to commercial risk (e.g. non-payment by foreign customer)? (please indicate the degree of importance on a scale of 1 to 5 , 1 meaning very little important to 5 meaning very important)

	Yes	No	Don't know	Degree of importance
• Revocable letter of credit, confirmed	……	……	……	***Co.rlc.r***
• Revocable letter of credit, not confirmed	……	……	……	***Nc.rlc.r***
• Irrevocable letter of credit, confirmed	……	……	……	***Co.ilc.r***
• Irrevocable letter of credit, not confirmed	……	……	……	***Nc.ilc.r***
• Insurance of commercial risks with Office National du Ducroire (OND)	……	……	……	***Insur.r***
• Other (please specify)	……	……	……	***Other3.r***

15. Is your company reducing its exposure to potential political risks ? (please indicate the degree of importance on a scale of 1 to 5, 1 meaning very littie important to 5 meaning very important)

	Yes	No	Don't know	Degree of importance
• no export to politically risky countries	……	……	……	***Noexp.r***
• political risks insurance with Office National du Ducroire	……	……	……	***Brisk.r***
• other (please specify)	……	……	……	***Other4.r***

16. Is your company receiving import duties offsets from the government to compensate for the import duties and custom procedure costs incurred on the imported products (raw material, machines, components, spare parts, etc.)? (please indicate the degree of importance on a scale of 1 to 5 , 1 meaning very little important to 5 meaning very important)

…… Yes …… No …… Don't know …… Degree of importance

17. Is your company using bonded factories and warehouses?

…… Yes …… No …… Don't know …… Degree of importance

18. Do you know Office National du Ducroire (OND)?

…… Yes …… No

Personal Information on respondent

19. Gender …… Male …… Female
20. Age …… Years
21. Your position in the company

…… Managing director …… Deputy managing director

…… Marketing manager …… Export manager

…… Other (please specify) ……

Appendix B: Discriminant results of original competitiveness variables

	BELGIUM	THAI
Product Design		Z = .564 Exhibitf + .515 Cotrad + .383 Nco.Ilc Box's M: 20.591 (.003) Wilks' Lambda (df : 3) = .796 (.005) % cases correctly classified : 68.3
Quality	Z = -..221 Xhibif.r + .916 S.Train Box's M: test can not be performed ! Wilks' Lambda (df: 2) = .670 (.015) % cases correctly classified: 100	Z = 1.00 info.r Box's M: .095 (.763)! Wilks' Lambda (df: 1) = .896 (.013) % cases correctly classified: 59.3
Variety		Z = .553 Trademis + .487 Exhibitf -.336 Cotrad + .524 Showfs Box's M: 15.16 (.175)! Wilks' Lambda (df: 4) = .831 (.018) % cases correctly classified : 75
Service	Z = -.682 Trademis + .911 S.Train +.253 RD Box's M : test can not be performed! Wilks' Lambda (df: 3) = .740 (.021) % cases correctly classified: 80.6	
Price	Z = 1.07 Co.Gov.r - .128 Contac.r Box's M: test can not be performed ! Wilks' Lambda (df: 2) = .485 (.013) % cases correctly classified: 86.7	Z = .87 Trademis + .70 Xhibif.r -.41 Train Box's M: 2.87 (.845)! Wilks' Lambda (df: 3) = .792 (.004) % cases correctly classified: 65.6
Delivery time	Z = .668 exhibitf -.551 Co.Gov.r +.464 Con.rlc +.270 Co.ilc Box's M: 17.374 (.208)! Wilks' Lambda (df: 4) = .411 (.003) % cases correctly classified: 86.4	Z = .926 Agency.r - .859 Info.r Box's M: 5.372 (.168)! Wilks' Lambda (df: 2) = .738 (.003) % cases correctly classified: 73.8
Promotion	Z = .823 Train + .703 Other4 Box's M : 4.051 (.390)! Wilks' Lambda (df: 2) = .568 (.005) % cases correctly classified: 90.9	Z = -.318 Trademis +.273 exhibitf + .723 Cotrad +.423 Info +.415 Nco.ilc Box's M: 49.031 (.000) Wilks' Lambda (df: 5) = .712 (.002) % cases correctly classified: 74.2
Distribution	Z = 1.00 Xhibid.r Box's M: 1.979 (.169) ! Wilks' Lambda (df: 1) = .846 (.047) % cases correctly classified: 69.2	Z = -.426 Trademis + .267 Xhibif.r +.649 Info.r Box's M : 2.936 (.841) ! Wilks' Lambda (df: 3) = .773 (.004) % cases correctly classified: 72.7
Flexibility	Z = -1.287 Xhibid.r + 1.481 Co.ilc.r Box's M: 3.097 (.519) ! Wilks' Lambda (df: 2) = .238 (.000) % cases correctly classified: 100	Z = -.787 Info.r + .818 Nco.rlc Box's M: 1.290 (.745) ! Wilks' Lambda (df: 2) = .838 (.009) % cases correctly classified: 73.2
Financial Status	Z = - .196 Exhibitd + .982 Co. Gov.r Box's M: 4.947 (.221)! Wilks' Lambda (df: 2) = .737 (.041) % cases correctly classified: 70.8	Z = - .330 Contac.r + .889 Info Box's M: 8.122 (.054) Wilks' Lambda (df: 2) = .738 (.000) % cases correctly classified: 79.2

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